Claims

1. A method comprising:

providing a substrate having a first surface and a second surface, a portion of the first surface is coupled to a conductive layer;

patterning the conductive layer;

introducing a compliant layer to the first surface of the substrate and to the conductive layer;

forming at least one aperture in the compliant layer which extends to a surface of the conductive layer;

introducing a conductive material into the at least one aperture;

coupling solder to the surface mount component and to the compliant layer; and

coupling the surface mount component to the compliant layer.

2. The method of claim 1, wherein the compliant layer comprises one of an elastomer and a polyimide.

3. The method of claim 2, further comprising:

selecting the compliant layer based upon an elastic modulus, a thickness, and a coefficient of thermal expansion associated with the compliant layer.

4. The method of claim 2, wherein the compliant layer is selected from elastomers having an elastic modulus from about 0.5 megapascal (MPa) to about 100MPa.

5. The method of claim 2, wherein the compliant layer is selected from an elastic modulus of a polyimide which ranges from about 500 to about 2,000MPa.

6. The method of claim 1, wherein the conductive layer comprises copper.

7. The method of claim 1, wherein a thickness of the compliant layer ranges from about 0.01 millimeters (mm) to about 1 mm.

8. A method comprising:

providing a substrate;

coupling a copper layer to the substrate;

patterning the copper layer;

applying a compliant layer to the substrate and to the patterned copper layer;

forming apertures in the compliant layer;

introducing a metal into the apertures of the compliant layer;

patterning the metal;

coupling solder to the surface mount component and to the compliant layer; and

coupling the surface mount component to the compliant layer.

9. The method of claim 8, wherein an elastic modulus of the compliant layer ranges from about 0.5MPa to about 2000MPa.

10. The method of claim 8, wherein the compliant layer comprises one of an elastomer and a polyimide.

11. The method of claim 8, wherein a thickness of the compliant layer ranges from about 0.01 millimeters (mm) to about 1 mm.

12. An apparatus comprising:

a substrate having a first surface and a second surface, a portion of the first surface coupled to a patterned conductive layer;

a compliant layer coupled to the first surface of the substrate and to the conductive layer;

an interconnect coupled to the compliant layer and to the conductive layer;

solder coupled to a surface mount component and to the compliant layer; and

the surface mount component coupled to the compliant layer.

13. The method of claim 12, wherein an elastic modulus of the compliant layer ranges from about 0.5 megapascal (MPa) to about 2000MPa.

14. The apparatus of claim 12, wherein the compliant layer comprises one of an elastomer and a polyimide.

15. The apparatus of claim 13, wherein a thickness of the compliant layer ranges from about 0.01 millimeters (mm) to about 1 mm.

16. An article comprising:

a storage medium including instructions stored thereon which when executed cause a digital system to perform a method including:

providing a substrate having a first surface and a second surface, a portion of the first surface is coupled to a conductive layer;

patterning the conductive layer;

introducing a compliant layer to the first surface of the substrate and to the conductive layer;

forming at least one aperture in the compliant layer which extends to a surface of the conductive layer;

introducing a conductive material into the at least one aperture;

coupling solder to the surface mount component and to the compliant layer; and

coupling the surface mount component to the compliant layer.

17. A machine readable storage media containing executable program instructions which when executed cause a digital processing system to perform a method comprising:

providing a substrate having a first surface and a second surface, a portion of the first surface is coupled to a conductive layer;

patterning the conductive layer;

introducing a compliant layer to the first surface of the substrate and to the conductive layer;

forming at least one aperture in the compliant layer which extends to a surface of the conductive layer;

introducing a conductive material into the at least one aperture;

coupling solder to the surface mount component and to the compliant layer; and

coupling the surface mount component to the compliant layer.

18. A method comprising:

providing a substrate having a first surface and a second surface, a portion of the first surface is coupled to a conductive layer;

patterning the conductive layer;

introducing a compliant layer to the first surface of the substrate and to the conductive layer;

forming at least one aperture in the compliant layer which extends to a surface of the conductive layer;

introducing a conductive material into the at least one aperture;

coupling a conductive adhesive to the surface mount component and to the compliant layer; and

coupling the surface mount component to the compliant layer.